SCIENCE & GOVERNMENT REPORT

11th Year of Publication

The Independent Bulletin of Science Policy

Volume XI, No. 11 | P.O. Box 6226A, Washington, D.C. 20015 | June 15, 1981

Keyworth: A Talk With Reagan's Science Adviser

The following is from a tape-recorded interview that SGR conducted June 3, in Washington, with George A. Keyworth II, whom President Reagan has nominated to serve as Director of the Office of Science and Technology Policy. Keyworth emphasized to SGR that, because his appointment has not yet been confirmed by the Senate, he was not speaking as a public official, nor do his views necessarily reflect Administration policy. The text has been edited for clarity and brevity, but without any substantive change.—DSG

●

SGR: Are you satisfied with the present pattern of distribution of basic research on an institutional basis—the bulk of it in universities and some in national labs and industry?

Keyworth: I'm more worried about the academic institutions than I am any other. I'm not sure that over the years we have learned how to adequately identify what our objectives in funding research are. First of all, do we identify the areas that are most important to us? Secondly, do we mix the research and the educational objectives well. I worry about the preservation of many of the institutions in this country that have really led to American pre-eminence.

Creation-Science Turns Attention to Washington—Page 6

SGR: What can be done to assure their survival?

Keyworth: Survival is not the word. To insure their excellence, we have to heavily emphasize excellence as a criterion for judgment of basic science.

SGR: Through the peer review system, the National Science Foundation, and various other...?

Keyworth: I know of nothing better than the peer review system. It's like democracy. You can throw all the arrows you want at it, but I simply don't know of anything that has ever worked more successfully.

SGR: University administrators have many complaints. They're concerned, for example, about the disappearance of fellowship funds, about A-21 [an Office of Management and Budget regulation governing accounting for federal research funds], and various other government regulations. Do you accept their complaints at face value?

Keyworth: I won't say at face value. You happen to have picked two that I've looked into. There is substance to the concerns in both areas. About fellowships—there are many sources of graduate support funding. The National Science Foundation fellowships were amongst the most prestigious, but remember, most grants to support education in the sciences and engineering come from research funds anyway, I believe. A-21 bothers me, but there is, I think, in academia, there has frequently been unwillingness to interpret the Administration's intention, desire, and willingness to be flexible. On the other hand, I'm afraid there's a basic inconsistency in asking the world of liberal academia to punch a timeclock. And if I were an academic scientist, I would not punch a timeclock. I do not think that is what A-21 is doing. The government-supported researchers owe a responsibility to report their time both honestly and responsibly. I don't think any academic institution rebels against that. It is the mechanism, and I think we should do our best to meet the requirements of reporting and to make it as non-onerous as possible. I think the Office of Management and Budget is entirely supportive of academia's concerns, and they are realistic in doing their very best to meet them half way.

SGR: There's quite a storm going on now in the academic world concerning the Administration's proposed budget reductions for the social and behavioral sciences in the National Science Foundation. Have you

(Continued on page 2)

Late and Different

George Keyworth's nomination, May 19, for the government's top science post stirred attention for two reasons: It came four months into the new Administration's term—late for a senior position, following turndowns from a number of other prospects (SGR XI, No. 10); and Keyworth, age 41, lacks the national-level science-policymaking experience common to most previous White House science advisers. Keyworth is the first of that elite group—eight, in all, since Eisenhower formally established the job in 1957—to have spent his career in a government lab, the Los Alamos National Laboratory, where he headed the physics division. Another item of more than passing interest to the Old Guard—which was predominantly drawn from big eastern universities—is that Keyworth is on close terms with Edward Teller, so-called father of the H-bomb, who's an anathema to the eastern wing.

...Some National Labs Have Outlived Mission

(Continued from page 1)

had an opportunity to look into that?

Keyworth: Not in great detail. I will make one comment. I do not think it has been the objective of the Administration to forcibly squeeze out areas of science. What they are trying to do—the economic recovery programs costs, it hurts, inevitably, and the benefits, I strongly believe, will more than offset that. For a limited period of time, you have relative priorities. In this Administration, and, I believe, well supported by the country, science and engineering that support the development of a stronger defense have top priority. Mostly because the areas of the social sciences are not as familiar to me as the areas of the "hard" sciences, I have not been able in my few days here to understand exactly what the impact is. I do intend to get together with [NSF Director] John Slaughter, whom I've talked to several times, in the very near future...I understand why [the budget cut] was done, now I'd like to learn more about the impact.

Dangers of Ups and Downs

SGR: The argument has been raised that you can't turn a field down for a few years or even a year with the expectation that it's there, ready to go into high gear again when you want it.

Keyworth: That concern reflects a sensitivity to the problems of science. "Spikes" have never worked. They don't work up any faster than they work down. And I heartily agree. If you de-emphasize, don't intend to re-emphasize down the road. The training period is too long, morale in a field brings up the old issue of the self-fulfilling prophecy. If you de-emphasize something—that's implying that it has lower priority; that will, therefore, give it lower priority, which will mean less stimulus in the field. As far as the social sciences are concerned, I apologize, but I do not know the magnitude of the impact. Obviously, there is a threshold for an impact that is negligibly small. There are very few things that are strongly influenced by a per cent reduction, for example.

SGR: You've spent your career so far in a national lab. There's always a lot of discussion on the Washington scene about which way for the future of the national labs. Are you satisfied that they are fulfilling their potential and that the resources given them are properly used, or is something due to be done with these great institutions?

Keyworth: No, I am not satisfied. The National laboratories are mature institutions. Most, if not all, of them were formed for a reason, that is, they all began with a mission. Unfortunately, the identification of those missions has changed as a function of time. In some cases, large institutions have lost their mission, and I think what we need to do, as a government, as a nation, we need to examine the role of each of these large institutions, and where there is no mission, decide if there is, let us say, a modern assignment, an appropriate assignment with the goals of the day. And, if not, to re-analyze the distribution of research funds between national laboratories and academic institutions and industrial research.

SGR: Do you envision any new kind of institutional model that might perhaps bring about a coalescence of national labs and academic institutions?

Keyworth: I'm afraid in this case, it's like raising children. It's an awful lot easier to find negative models than good models. I think we might perhaps value looking at the way it's done elsewhere in the world, but I'm not sure we're going to find any positive examples. I've studied it a fair amount myself. I might say that, with the national laboratories—large government R&D institutions—we have a problem of how they evolve in a mature stage. Remember, we are soon to be facing a third generation in most of the national laboratories. And I'm not sure what the right model is. Are they too big? I don't know. There are tough questions to ask, because there is a very substantial sum of our total research and development funds in those national laboratories. It is something I intend to concentrate on and to understand [by obtaining], not only views from the community in which I have grown up, but, of

(Continued on page 3)

©Science & Government Report, Inc., 1981

ISSN 0048-9581

Editor and Publisher
Daniel S. Greenberg

Associate Publisher
Wanda J. Reif

Circulation Manager
Gail A. Gallessich

Contributing Correspondents
David Dickson, Clive Cookson (Washington); Michael Kenward (London); Francois Seguier (Paris)

Independently published by *Science & Government Report,* Inc., twice monthly, except once each in January, July and August. Annual Subscription: Institutions, $118.50 (two years, $198.50); individuals, $48.50 (two years, $82.50). Editorial offices at 3736 Kanawha St., N.W., Washington, DC 20015. Tel. (202) 244-4135. Second class postage paid at Washington, DC. Please address all subscription correspondence to Box 6226A, Northwest Station, Washington, DC 20015. Reproduction without permission is prohibited. SGR is available on Xerox University Microfilms. Claims for missing back issues will be filled without charge if made within six months of publication date.

...More Research Needed on Nuclear Weapons

(Continued from page 2)

course, the industrial perception and the academic perception.

SGR: Have you been given any kind of marching orders in terms of priorities for your attention?

Keyworth: No, I haven't been given marching orders, and expect that it's largely because I am a nominee and am formally a consultant. What I've been trying to do on my own...is to become aware of the priorities in the White House and see how I as a scientist with access to the community of science and engineering can contribute to solving these problems.

SGR: Whom do you have contact with on the White House staff? How are you arranged in the table of organization?

Keyworth: I have absolutely no idea, and I have avoided asking the question. Judging by the number of times I'm asked the question, it must be very important. But I felt when I talked to the [White House] senior staff that we had a good rapport. My background is entirely different from theirs, and I felt no lack of confidence or concern about whether I would be involved in those areas where my background was appropriate. Let me put it bluntly: Turf squabbling is not an area of interest for me.

We Don't Have Turf

SGR: But Washington is only about turf squabbling.

Keyworth: I know, but I think one of the most positive things I have about my own perspective and perception about this office is that this office should not be a turf-conscious office. I don't think we have turf. I think we have responsibility to help formulate, to help [White House senior staff members] Martin Anderson, to help Dick Allen, to help Ed Meese, to help OMB.

SGR: Have you met with all of them?

Keyworth: Yes.

SGR: Have any of them expressed an interest in this or that being looked into?

Keyworth: We've discussed areas of common interest, first. Second, we've discussed areas of priority right now, and I expect that after I had something more than—this is my seventh day—I expect that we'll have lots more discussion.

SGR: In the past, this office has off and on played a role in arms-control and disarmament discussions and military affairs of one sort or another. Do you foresee a role there, too?

Keyworth: I have personally had long interest in defense matters, the technology of defense. I am, like most people, a strong believer that arms control ultimately is an absolutely essential component of our national defense policy. Let's face it, the nuclear deterrent has maintained peace for 36 years, but it is fundamentally unstable. And the only way of reducing that dependence upon instability is through arms control. So, my interests are strong in that area. I would like to remain, I would like to be involved in a scientific and technical way, and I hope that I will be.

Basic Research Career

SGR: Does your own professional background include any direct weapons work, or were you more on the basic research side?

Keyworth: Most people don't quite grasp exactly the nature of the national laboratories. Los Alamos is truly a multi-disciplinary laboratory. We have very clearly defined weapons responsibilities, and we address and satisfy those. We also have, on one extreme side, a pure, academic science motivated to keep the maximum amount of stimulus and the finest possible scientists at Los Alamos. Most of my own professional research career was spent in basic nuclear physics, and in that sense, my output was publications and pure knowledge. In recent years, I have gotten more and more involved in trying to address the fact that we really don't understand much of what is going on with nuclear weapons, and if we were required to make major steps in nuclear-weapons technology, much of the knowledge base is not there.

SGR: What do you mean that we don't understand what's going on with nuclear weapons?

Keyworth: I want to avoid classification here in any way. But particularly in thermonuclear weapons, the physics of exactly what is happening in that very, very short period of time when enormous energy density is generated and conversion of energy from one type to another—a lot of the physics is simply not very well known, particularly in the area of hydrodynamics. And I have worked very hard to try to devise laboratory mechanisms...a research environment that is superior to the environment of the Nevada Test Site doing underground tests, so that in the laboratory we could try to improve...the knowledge base. In other words, the measure of knowledge of nuclear-weapons technlogy is what you have in the codes, in the giant computer codes, that are used to design nuclear weapons. I have done work and I have tried to stimulate work to improve the quality of that knowledge base. Most recently, in the last few years, I have been directly responsible, in a line sense, for managing the underground-test diagnostic program and the laser inertial-fusion program.

SGR: In the context of strengthening defense, what might be feasible with simultaneous steps toward arms

(Continued on page 4)

...Adviser's Job is to Advise, Not Lobby

(Continued from page 3)

control?

Keyworth: I basically believe in the argument that one can negotiate most effectively from a position of parity, and, secondly, I think...that the key issue in arms control is that one address arms control and not relatively unimportant technical agreements. A threshold test ban, for example, is far less important than an actual arms-limitation agreement, an actual reduction in arms, for example. And I think it is wise for us to concentrate our arms-control negotiations in future years on really substantive issues of major changes.

SGR: But a threshold treaty is subject to verification easily, whereas an arms-reduction treaty, in many circumstances, isn't.

Keyworth: A non-trivial aspect of the problem, but don't you agree that verification is something that we're going to have to learn how to do? And I don't mean verification based on blind trust.

SGR: Then you're referring to national means of technical verification?

Keyworth: Yes. You should also give me opportunity for coming up to speed on all the considerations that have occurred, particularly in the last 11 years or so in arms control, with all the verification concerns. I know a fair amount about test verification, because I've worked in the area, but all the considerations in actually verifying one's stockpile are, of course, non-trivial.

Commonality of Views

SGR: As has been widely published, your appointment is from outside the circles that normally have supplied presidential science advisers. Some might say...so much the better for it. What was the genesis of your appointment?

Keyworth: Believe it or not, although it has stimulated my curiosity, I really haven't wanted to know exactly who were the people who originally suggested me...I think the White House people probably talked to a fair number, and I think that we found a significant commonality, both in terms of philosophy and, maybe of equal importance, I think my views of the functioning of this office are perhaps quite compatible with their own views...If I were somebody involved in major policy decisions in the White House, I would like to have an adviser who is available, whose loyalty and motives I did not doubt, and, therefore, when I first answered them as to what I thought the nature of the job was, I think I was in considerable consonance with them. But, I'm a little curious myself. Remember something: Don't confuse the stature of science advisers in the past as they left after four years with the same gentlemen as they entered. But it's true, I have not been involved in any substantive way in science-policymaking, and the majority...of previous science advisers had been. These are rapidly changing times.

SGR: You said that your conception of the functions of the office seems to be in harmony with the Administration's. How did you state your conception?

Keyworth: In two or three words: Adviser versus advocate.

SGR: That suggests, then, that at least some of your predecessors were functioning as advocates.

Keyworth: I think that there's enormous pressure on this office, always, from all the communities that feel represented by this office. And I am younger than most, if not all, of the other science advisers, and also my interests have been...spread over quite a few different communities. I've been deeply involved in and committed to nuclear-weapons development, I've been an active member of the nuclear-physics community, and an active member recently of the community of laser development and laser fusion, and astrophysics and solid state. I've been the principal pusher at Los Alamos for a major role in condensed-matter sciences in this country. Yet, I do not consider myself a condensed-matter scientist or an astrophysicist. My interests have been far broader than most specialized scientists, partly because I have been in...technical leadership for some years, in contrast to doing my own favorite research. But my point is only that I feel my membership is distributed across multiple communities, rather than a single one.

Teller a "Good Friend"

SGR: It's appeared in print that perhaps Edward Teller had some role in bringing your name to the attention of the Administration.

Keyworth: Edward is a prominent person, and Edward and I are good friends, and I'm sure that Edward has sponsored me. But I would be very surprised if he was the sole supporter of me, even at the earliest stages. I must admit that I have met many scientists, and many great scientists, and few who have the remarkable intellectual abilities of Edward Teller. We do not agree on everything, but he is certainly one of the most remarkable living scientific minds.

SGR: What will you look for in staffing the office?

Keyworth: ...One thing that's obvious is that I am a physicist, and the scope of this office is a lot more than physics, and, therefore, one of my major concerns is that areas with which I am least familiar are those areas where I most need expertise.

SGR: The life sciences, for example?

Keyworth: The life sciences are a perfect example. That happens to be an area I'm really quite interested

(Continued on page 5)

...Next Accelerator Might be International

(Continued from page 4)

in, but my expertise is, at the very best, modest. Engineering, also. I've not had great experience with industrial science, and I need people who have contacts and who have had personal involvement in the world of industry, too. That's important in this Administration.

SGR: You mentioned sometime back your "interests and prejudices." What are some of your prejudices?

Keyworth: ...If you live day after day in the world of science, you may not find this so trite. My real prejudice, certainly in my career, is that I believe that excellence really should be the principal driving criterion against which all science is judged. And great science has historically been done in an environment of worshipping excellence above all. And I'm not sure that that standard has been retained. So, I come definitely with that prejudice...Management of science is easy in a time of surplus funds, like the '60s. Management of science...in a time of tight funds is not so easy. I'm not so sure we've learned to do it very well...

Advisory Council Revival

SGR: Do you foresee any kind of council of elders or PSAC [President's Science Advisory Committee, now defunct], or advisory group?

Keyworth: How much time do you think I've thought about this one? I can only tell you where I am now. I do not think that PSAC exactly as it was originally formed is the optimal way of meeting the needs today. On the other hand, I think one of the values of this office is that it is a means for using the entire science, engineering, and technological communities—the expertise that is in those communities—in...an expert way...So, a mechanism must be there, and I am not sure what the right mechanism is, but I certainly am talking about this with a lot of people, a lot of people who served on the old PSAC.

SGR: Your inclination is that there should be some kind of body, but just what it would be is not quite clear to you yet?

Keyworth: I must be the world's most presumptuous man if I didn't think there had to be some way...There is enormous expertise out there in the country, and to say that I did not wish to benefit from it would be a bit presumptuous. But remember, we scientists have a contribution in policymaking but we scientists must be careful of limiting our major contribution to those areas where we have expertise. And in that sense, I would like to use the community to help in a technical way, and use that as an input to the whole policymaking process here.

SGR: Have you met with Mr. Reagan since coming here, or before that? Were you ever politically active?

Keyworth: No. I won't say that I have been a-political, but politics has been a very small portion in my life.

SGR: What about Senator [Harrison] Schmitt (R-New Mexico)?

Keyworth: I've known "Jack" Schmitt only since I've been considered for this position...

SGR: The role of science and technology in international relations has had its ups and downs in recent years. Do you have any views about how we should proceed in this area?

Keyworth: ...I'm still formulating my views, but first of all, I'm a strong believer, because I've been very much involved in it personally, in international collaboration in science...There are many things that are either too expensive or they're too narrow in purpose for us to bear the total expense. There have been enormously successful collaborations in Europe. CERN (The European Center for Nuclear Research) is probably the most famous.

SGR: Would you favor an international machine for the next accelerator?

Keyworth: That's a technical question, a very interesting question, and I certainly have wondered about that, because the next major breakthrough on high-energy physics in accelerator technology may be a very large machine, much larger than...for example, what we're building at Fermi Lab. And if we're going to make order-of-magnitude increase, maybe the only way to do it is in collaboration. In the first place, you're going to start requiring so damn much land...However, let's look at something else. In terms of support of stimulating a developing nation, technology may, in many ways, be the most practical solution in terms of the expense to ourselves and the benefit to the recipient that we could possibly do. So, I believe that technology does play a strong role in international policy. I think with China, that was certainly a prime example...

Collaboration with Soviets

SGR: What about collaborative efforts with the Soviets?

Keyworth: With the Soviets, I would take a fairly hard line, except to say that I think a minimum level of scientific exchange should be essentially beyond political constraints. In other words, I think that some level of scientific collaboration and scientific interaction is practical and beneficial to us. On the other hand, I strongly believe in things like export controls on high technology to the Soviet Union.

SGR: Did you have any opportunity to collaborate with members of the Soviet research community?

Keyworth: I've been to the Soviet Union twice...

SGR: What were your impressions?

Keyworth: ...Their top scientists, their really top peo-

(Continued on page 6)

Arkansas Win Encourages Creationist Lobby

Encouraged by its recent success in persuading the State of Arkansas to pass a law requiring that "creation-science" be given equal time with the theory of evolution in public schools, the creationist movement is turning toward Washington in quest of nationwide results.

Many Congressmen, particularly from Kentucky, Tennessee, and Louisiana, have been approached by constituents about introducing a bill which would require the federal government to provide "creation scientists" with the same degree of teaching and research support as currently provided to biologists who support the conventional Darwinian view.

So far, the Congressmen have limited their activities to making inquiries to the National Science Foundation and House and Senate committee staffs with NSF jurisdiction; virtually all have expressed strong reservations. However, with a strong wind from the right continuing to blow in Congress "we would not be surprised if someone tries to slip through a bill like this within the next few months," a staff member of the House Science and Technology Committee said last week.

If so, such a bill would provide a dilemma for legislators. In Arkansas, legislation was passed by a substantial margin not because the majority of those who voted for the bill believed in its content—indeed, many seem to have been embarrassed by the subsequent turn of events, not expecting the bill to become law—but because they feared that a vote against the bill would appear to be a vote of no confidence in the Bible, a politically risky move in a strongly religious state.

Similar circumstances could arise in Washington. It is generally accepted that the recent rise in popularity of attacks on Darwinian teaching in schools is part of a conservative trend being fanned by groups such as the Moral Majority, which has a set of curriculum and public school reforms in its sights. In particular, this movement has pin-pointed the teaching of what it calls "secular humanism" as an attempt to indoctrinate school children with what it condemns as liberal and atheistic values. But many conservative Congressmen who might be persuaded to support such moves in general would hesitate before endorsing a full-scale critique of Darwinian evolution.

Realizing that their demands could become the Achilles heel of the neo-conservative revival, creationists are shaping their legislative demands in a way which, they feel, will both meet the constitutional challenge that they are trying to link church and state, and at the same time appear merely to be a request for "fair-play" in schools. The Arkansas law, for example, is entitled "Balanced Treatment for Creation-Science and Evolution-Science Act," and was carefully crafted by lawyers who support the conservative cause to eliminate explicit reference to religion.

This has not stopped the American Civil Liberties Union from filing a suit against the State on behalf of a number of local teachers and religious groups who claim the bill is unconstitutional—a challenge which both sides are prepared to take to the Supreme Court, if necessary. But given the legal expertise which has been put into drafting the bill, ACLU attorneys believe they face serious difficulties.

The same group which drafted the Arkansas bill, virtually identical versions of which were introduced in 17 other state legislatures during their most recent sessions, is also responsible for the federal efforts. So far, these have been concentrated on a bill entitled "An Act to Protect Academic Freedom and to Prevent Federal Censorship in Scientific Inquiry Funded with Federal Tax Monies." Its main thrust is that where federal funds are provided for museum exhibits, research supported

(Continued on page 7)

KEYWORTH *(Continued from page 5)*

ple, are just amazingly creative, just like our own. But I would say that the great majority of Soviet scientists, I do not think are up to American standards. But remember, the most excellent scientists have a very disproportionate output, so I have a great respect for Soviet science and technology. On the other hand, I always come out of the Soviet Union in a state of depression.

SGR: Why is that?

Keyworth: I find the Soviet Union a very depressing environment, in contrast to China, for example...The Soviet Union strikes me as having an oppressed society where free spirit—not free speech— is not in evidence. China is a nation of enormous optimism at the moment...I was not there before the Cultural Revolution, and the relief of the moment may be part of it. But there is enormous optimism and a tremendous work ethic in China. It's completely different in the Soviet Union.

SGR: What are your views on the concerns being expressed about science and math education in the United States, especially in comparison with the reported higher achievements in other countries?

Keyworth: I want to learn a lot more about the education problem. But there's no question in my mind that American education, from the low level to the very top graduate level, is probably not optimum for meeting the needs of the nation today...I think it's a serious problem, but I'm not sure that the Soviet system, or the European system, is correct...

...NSF Warns Against "Equal Time" Demand

(Continued from page 6)

by the National Science Foundation or other agencies, for exhibits planned by the National Park Service, or for curriculum development, support will be provided for the creation-science point of view "to the extent such funds are applied to evolutionist research or origins."

The bill is being distributed around the country by a group based in North Carolina known as Citizens Against Federal Establishment of Evolutionary Dogma. Initially, the two co-chairmen of the group were Thomas G. Barnes, previously President of the Creation Research Society and Professor of Physics at the University of Texas, now on the staff of the Institute for Creation Research in San Diego, California, and John W. Whitehead, a Washington attorney who has worked closely with ex-Rep. John B. Conlan (R-Ariz.). Whitehead also works with the National Evangelical Association, a coordinating body for evangelical groups throughout the country—a fact which creationists, keen to appear to be making a strictly scientific argument, claim to be irrelevant.

The current chairman of the group promoting the bill is Paul Ellwanger of Anderson, South Carolina, who also acted as principal coordinator of efforts to pass the legislation in that state, soliciting comments on an earlier draft from attorneys and state legislators across the country. In a cover letter to the draft federal bill, sent out last summer, Ellwanger says that its primary emphasis "is on putting a stop to the current evolution-monopoly by requiring federally funded projects of any kind that deal with the subject of origins to remain neutral between alternate explanations that have scientific support."

The National Science Foundation's views on the Bill have been requested by Senator Walter D. Huddleston (D-Ky.), one of many legislators who have received copies and requests to be co-sponsors. (Huddleston's request came from a Dr. Robert Amis in Hopkinsville, Kentucky, who stated: "I feel that we should have academic freedom. We should not be taught humanism any more than any other religion and I believe this is being done in many ways with federal monies today.")

Replying to Senator Huddleston, NSF General Counsel Charles H. Herz wrote that although the bill was characterized as an attempt to prevent federal censorship of minority scientific viewpoints, in practice its requirement of "equal time" for competing philosophical schools could "seriously inhibit" scientific research in the US. Awards were made by the NSF solely on the basis of scientific merit as judged by the NSF and the applicants' scientific peers, he said.

"It is the merit of the proposal itself, not the philosophical beliefs of the researcher or the attractiveness of the expected outcome, that must be the criterion against which all proposals are judged," Herz said. "The proposed bill rejects this basic premise and would require the Foundation to consider both the applicant's beliefs and the likely outcome of the research in its allocation of funds. If extended to all the fields in which there is scientific or philosophical dispute, such a requirement of 'equal time' could severely distort the allocation of federal monies, introduce factors extraneous to scientific research, and itself constitute a form of subtle federal censorship of academic research. We therefore believe such a bill to be unwise."

Such arguments are unlikely to deter the creationists and their supporters, several of whom have already received a sympathetic ear on Capitol Hill. Earlier this year, for example, a slide-show presentation of the creationist argument was given by a New York engineer, Luther Sunderland, at a meeting in the Rayburn House Office Building organized by a member of the minority staff of the House Science and Technology Committee, Michael Helmantoler.

Staff assistants of several Congressmen, including Rep. Philip M. Crane (R-Ill.), were also at the slide show. And several legislators, such as Rep. Albert Lee Smith Jr. (R-Ala.), later listened sympathetically to Kelly Segraves, Director of the Creation-Science Research Center of San Diego and prime mover of the recent case in Sacramento against the State of California, on a recent visit to Washington.

The various creationist groups around the US have agreed among themselves on a division of labor, some concentrating on "scientific research" (primarily an attempt to pick holes in conventional evolutionary theory), publishing technical journals, and providing lecturers and debaters, others publishing public and private school materials and conducting teacher training workshops. There is also a growing number promoting legislation and working through the courts. Despite this apparent diversity, all these groups subscribe to a common policy for the teaching of "the subject of origins" in the public schools.

Twenty-four organizations and "creationist leaders," for example, have given their support to a "united creationist public education policy." This repeats increasingly familiar themes, such as the charge that teaching only evolution in schools "amounts to censorship and indoctrination in a philosophical belief system," and that public education institutions "should adopt a strictly neutral policy and not prescribe, promote or en-

(Continued on page 8)

..."Hit List" Against NSF Staff Rumored

(Continued from page 7)
dorse any one theory over another."

As these groups proliferate, so do rumors about the sources of their financial support. Little is voluntarily disclosed, and the groups do not have to declare where their contributions come from. One rumor is that the silver-dealing Hunt brothers of Texas, supporters of several Washington-based conservative groups, have been among the principal financial contributors to the Institute for Creation Research. Another is that ex-Rep. Conlan, currently practicing as an attorney in Arkansas, helped to cover the creationists' costs in the recent Sacramento trial.

Also growing has been the strength of the opposition. Previously, the main opponents had been groups such as the National Association of Biology Teachers. Now the organizations taking a more active stance in opposition to creationist pressure include the American Association for the Advancement of Science, the ACLU (which plans to carry out a major fund-raising effort to support its suit against the State of Arkansas, the first time the ACLU has confronted the creationists since Clarence Darrow's famous court performance as an ACLU attorney in the Tennessee Scopes Trial of 1928), and, most recently, the Association of American University Professors.

The AAUP, for example, has expressed its opposition to a proposed law being discussed in Louisiana similar to that which was passed in Arkansas. In the AAUP's view the law would "reduce the academic freedom of teachers to a vanishing point" and undermine academic freedom in the state's public colleges and universities. In testimony presented to the State Legislature at the end of May, AAUP President Henry T. Yost expressed particular concern about provisions in the bill which would appropriate money for workshops in 25 universities to provide faculty members who educate public school teachers with training in creation-science. "If we are to have true universities, these rights cannot be fettered by the state's political bodies," Professor Yost said.

Thus are the battle lines being drawn. President Reagan has been more lukewarm to the demands of the conservative right on issues such as the teaching of evolution than he was during the election campaign last summer. But already such groups have shown their potential strength through their promotion of budget cuts that will virtually eliminate science-education programs at the National Science Foundation, long a popular target for the creationists. So far, the more politically mainstream of such groups have been distancing themselves from the most radical demands of others, such as the Moral Majority, which currently provides the biggest support for creationist teaching. The Heritage Foundation's widely quoted *Mandate for Leadership: Policy Management in a Conservative Administration,* for example, while repeating familiar attacks on the teaching of liberal values, refers to the creationist controversy only by implication, talking of the need for the Department of Education to ensure the "scientific and factual accuracy" of education activities supported by the Federal Government.

But there are reports of stronger forces in the wings. Some staff members of both the House Science and Technology Committee and the NSF have been warned that they are on a "hit list" because of their sympathy to conventional ideas about science and evolution.

The seriousness of such bizarre warnings is difficult to pin down, and the staff members who are reportedly involved don't wish to discuss the matter publicly. In other times, such nonsensical intrusions into legislative affairs would be laughed off Capitol Hill. But as the creationist move builds up political strength, its activities are not evoking mirth.—DD

Science & Government Report
Northwest Station
Box 6226A
Washington, D.C. 20015

Second class postage paid at Washington, D.C.

SGR Summer Schedule

The next issue of *Science & Government Report* will be published July 15, 1981.

9999
Xerox-University Microfilms
300 N. Zeeb Rd
Ann Arbor MI 48106